LOUISIANA TECHNOLOGY INNOVATIONS FUND - PROGRESS REPORT

[March 1, 1999]

I DEPARTMENT/AGENCY **LSU Medical Center**

II PROJECT TITLE

LOUISIANA PATIENT IDENTIFICATION (BIOMETRICS) AND TRACKING (BARCODING) PROJECT

III PROJECT LEADER

Richard Ferrans, M.D.
Chief of Medical Informatics and Telemedicine
Department of Public Health
LSU Medical Center
2021 Perdido Street
New Orleans, LA 70112
504-588-3507
504-588-3938
rferra1@lsumc.edu

IV DESCRIPTION OF THE PROJECT

The LSU Medical Center is committed to improving the provision of healthcare services to all Louisianans. Technology enhancements and innovations are at the center of LSU Medical Center's strategic plan to fundamentally reform the Public Hospital System. A next generation clinical information system will be rolled out in the coming 2 years that will provide crucial medical information to the point of care, as well aggregate data for medical research, outcomes measurement, and continuous quality improvement. This computer-based system of medical records will also interface with our administrative systems, which currently perform eligibility checking, billing, and other functions. Our goal is system integration, which in turn makes business re-engineering possible. In order for this approach to succeed, it must have accurate data input and airtight security. Health data is centered around individual patients; we must, therefore, authenticate their identities. The ability to authenticate patient identities will also increase our ability to verify eligibility status for services. As we place clinical information online, it is also imperative that we provide a logical security solution that will protect information at the workstation level.

Proposal

The LSU Medical Center has been awarded an 862,000 grant from the Louisiana Technology Innovations Fund to implement a biometric identification system for patient identification and workstation security, as well as a barcode inpatient tracking system. Patients will be enrolled using a special digital scan of the fingertip that will immediately converted to a twelve digit number; that number will be entered into our Master Patient Index. Patients' identities will be verified in the future using this system, which eliminates problems of similar or same names, unknown identity (unconscious, altered mental status), and false identity use. This identification system will give clinicians the ability to immediately access the correct patient's medical information such as allergies and past medical history from our Clinical Data Repository. In addition, we will then search online databases for Medicaid, Medicare, and private insurance eligibility, thereby generating 1.5 million dollars annually for every percent of patients that our system currently misidentified as "free care". *

The LSU Medical Center will utilize this same biometric technology to restrict access to electronic health information. All providers in the Public Hospital System will use a biometric reader as the password system for logging on to a workstation. This system prevents theft or "lending" of passwords; each individual doctor or nurse must logon using his or her personal identifiable characteristic (fingertip scan). **This project will significantly enhance the privacy of our patients**.

The LSU Medical Center will also implement an inpatient patient tracking and data collection system using barcode technology. Patient bracelets will have barcodes placed on them, which will allow for quick scans to denote patient departure and arrival and different areas of the hospital, thus improving census and bed status information. Barcode scanners will also be programmed to enter vital signs, thus allowing for an inexpensive, portable, and proven solution to capturing clinical information. This information can then be entered into the patient's electronic database in a seamless manner.

V PROJECT STATUS

A. Brief Summary

The Biometric Identification Project is an ambitious project to better identify patients as well as improve security of medical records. Planning for this project has a number of interdependencies that will affect its success. The first task was to list the functional and technical requirements for biometric identification. Below is a brief list the most important requirements.

Functional:

?? Hardware and software must accomplish multiple means of biometric identification: fingerprint, voice, face, etc. For example, face can be used for patients with hand deformities, and for workstation security in gloved areas such as the lab.
?? First acquisition (Enrollment) time must less than one minute: logon or verification time must be only a few seconds.
?? Must be easy to use for patients and personnel.

Technical

?? Must work in thin client architecture
?? Must work in internet browser
?? Must work in Windows NT
?? Must integrate with NT Security
?? Must integrate with new registration process

After a search of existing products, we discovered that although there were many companies offering biometric security, not one was able to offer a solution that worked within an NT based thin client architecture. This is critical since the HCSD will roll out over 1500 of these network computers this year. Because of the importance of this project, the bid process for the bulk of the thin clients was delayed until a solution could be achieved.

For the past four months, LSUMC Computer Services and the Section of Medical Informatics have worked with a vendor (Integrated Visions, Inc.) to develop a solution. Bart Ponze, Director of Enterprise Services led the effort to describe a high level technical approach to a thin client version of the system. After numerous teleconferences, phone call, and face to face meetings, Integrated Visions and NCD Corporation developed the first thin client solution for biometrics. This was announced at the Health Information Management and Systems Society Meeting (HIMSS) one week ago. The two vendors will meet in New Orleans with our staff to begin discussions of state contracting issues.

LSUMC Informatics has worked with Integrated Visions to explain the functional requirements of the user interface for patient registration, verification, and workstation security. Integrated Visions will provide all of these interfaces to us with their existing product, thus eliminating developer time needed.

Once identity has been established biometrically, eligibility will be the next step in the registration process. LSUMC has been working to incorporate the DHH Medicaid eligibility database searching into our existing IT infrastructure. This will be available within 60 days; other databases will be available in time for incorporation with the biometric security rollout.

Planning efforts now turn to the rollout of biometric identification and security. The pilot project will be at the Medical Center of Louisiana at New Orleans. Dr. Ferrans traveled to Atlanta in February to meet with the Chief Information Officer of the Mayo Clinic in Jacksonville, FL, and the CIO of Mayo Hospital in Scottsdale Arizona who are using biometric/ single logon to discuss implementation issues. Dr. Robert Marier and Dr. Ferrans were given a demonstration of the new thin client solution in Atlanta, as well as new features for identification. Our current plans for a pilot are dependent upon thin clients being installed, which will begin at the end of the second quarter (calendar) of 1999. Biometric devices will be installed at the same time: at the request of Dr. Marier, the HCSD will purchase keyboards with embedded biometric devices. So as to minimize theft of computer peripherals. Face recognition will be installed in the lab settings, since the new lab system will go into production August 1999. Following this, we will have thin clients biometrically enabled from the hardware standpoint for fingerprint recognition: we will enroll our clinicians first at MCLNO, then "turn on" biometrics in the Fall of 1999. Small pilots are less necessary, given the success of the Mayo Clinic. We would then expand workstation biometrics in early 2000 across the other hospitals.

Patient identification by biometrics will be the second stage of rollout, immediately following the rollout of workstation security. The reason for this being the second, rather than the first phase of the project is twofold. First, the HCSD has decided to abandon the SMS Patient Registration Module in favor of developing a new, open architecture registration package that will feed our Computer Based Patient Record System. Biometrics will be incorporated in as a component of that process, and it will not be available until December, 1999. The workflow improvements of this system will completely offset any delays introduced by biometric registration. Second, we wish to tell our patients that doctors are already using this same type of identification process, in order to better "market" the service as enhancing patient information privacy and confidentiality. This part of the project will be a critical component in the overall registration process redesign.

Since registration is being redesigned, we will also introduce the patient tracking at the time of rolling out the new registration system. Greg Speyer, Chief of Information Systems for the HCSD, has been working with a vendor Versus Technology on a patient tracking system that is wireless, allowing for real-time location of any patient in the hospital. These wireless locator devices come in disposable and non-disposable forms, and will be stamped with a barcode. The vendor will be demonstrating this to Dr. Marier and to David Troendle, Assistant Vice Chancellor for Information Technology within 2 weeks in New Orleans. The barcodes remain critical because the handheld barcode readers will allow rapid input of vital signs and other patient data.

B. Accomplishments

- ?? Development of a thin client solution for biometrics
- ?? Identification of vendors to be considered
- ?? Meeting with reference site leaders
- ?? Plan for rollout developed

C. Problems Encountered/Action Taken or Planned

- ?? NO thin client solution/ vendor developed solution for LSUMC
- ?? Delay in thin client implementation/ Delay in biometric rollout
- ?? Problems integrating with proprietary patient registration system/ begin to develop new improved registration system
- ??

D. Major Milestones (Original vs. Current Estimate)

Biometric Project Planning	**2 weeks**	**6 months**
Biometric Equipment Acquisition	**4 months**	**2 months**
Biometric System Development	**6 months**	**2 months**
Biometric Implementation	**3 months**	**3.5 months**

Any delays will be due to delay in thin client rollout; this is the chief interdependency.

Bar code Project Planning	**2 weeks**	**3 months**
Bar code Equipment Acquisition	**4 months**	**4 months**
Bar code System Development	**6 months**	**4 months**
Bar code Implementation	**3 months**	**3 months**

The project will take less time than anticipated, but planning is starting later since the registration process is being redesigned.

VI COST VS. BUDGET

	Category	Budgeted	Actual(Projected)	Expended	Projected Surplus
A.	Equipment	651,000	651,000	0	0
B.	Software	212,000	212,000	0	0
C.	Telecommunications	0	0	0	0
D.	Contract Services	0	0	0	0
E.	Other Costs	0	0	0	0

Total Project Cost 863,000

Unit Expanded

VII ITEMIZED EXPENSES AND FINANCIAL OBLIGATIONS INCURRED DURING THIS REPORTING PERIOD

NO funds have been expended: funds will be expended once the vendors providing a thin client solution are on state contract.